pt. 2 pts without history of SVTA, but with inducible SVTA developed later spontaneous SVTA.

Conclusion: ARVD was associated with a significantly higher incidence of inducible SVTA than in a control population. Supraventricular tachycardias may precede ventricular tachycardias. This association argues for a diffuse myocardial disorder in ARVD.

1228-172 Catheter Ablation for Common Atrial Flutter: Randomized Comparison at the Two Right Atrial Isthmuses

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Background: It is now accepted that radiofrequency ablation (RFA) can abolish common atrial flutter (CAF) based in an anatomically guided approach. However, two target sites have been used and the current experience remains limited. These critical sites are two isthmuses localized at the low right atrium: Posterior isthmus (P) = Tricuspid annulus-Inferior Vena Cava and Septal isthmus (S) = Tricuspid annulus-Coronary Sinus Ostium.

Methods: We prospectively compared the RFA at these 2 isthmuses in 22 consecutive patients (p), randomized alternatively to one of them (11 p to P and 11 p to S). The RFA was always performed during CAF and a 7F quadripolar 8-mm tip catheter was used. Ablation success was defined by: (1) the termination of the CAF due to isthmus block during the RF current application, and (2) the inability to reinduce CAF for a period of at least 30 minutes by programmed stimulation of the right atrium, isoproterenol infusion included, and (3) the demostration of a complete bidirectional isthmus block. According to study protocol if RDF failed at one isthmus after the fulfilment of 3 complete lines along it, the RF was applied in the other one.

Results: Procedure duration was similar at the two sites: 139 ± 42 (P) vs 150 ± 29 (S) and also fluoroscopic time: 38 ± 13 (P) vs 44 ± 28 (S). Transient high degree AV block during RFA ocurred in 4 pts (1 at P and 3 at S) and was coincidental to severe chest pain in all of them. Success at the first choice was obtained in 6/11 at P and in 7/11 at S and at the another isthmus in 4/5 at P and in 3/4 at S so the total success was 90% (20/22). The remaining two patients fulfilled the two first criteria of success but it was only possible to produce unidirectional isthmus block. During a 5-month mean follow-up, CAF only recurred in 3 of 20 p who had a successful ablation. 3 p experienced atrial fibrillation that needed antiarrhythmic therapy.

Conclusions: RDF of CAF seems equally effective and safe at the posterior and septal isthmus. We have not found significant differences between the two methods in our initial results so they could be complementaries.

1229 Leads, Drugs, and Clinical Application of Implantable Cardioverter Defibrillators

Wednesday, April 1, 1998, 3:00 p.m.–5:00 p.m.
Georgia World Congress Center, West Exhibit Hall Level
Presentation Hour: 4:00 p.m.–5:00 p.m.

1229-173 Time Course of Intensified Follow-up Phase of the Medtronic 7217b Pacemaker Cardioverter Defibrillator (PCD)

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Background: Intensified follow-up of the Medtronic 7217B PCD is recommended when the battery voltage (BV) declines to 5.25V and continues until an elective replacement indicator (ERI) (BV = 4.97V or charge time = 11 sec) is reached. The mandated monthly or bimonthly evaluations of BV and charge time (CT) places burdens on patients, increases demands on clinics and diminishes battery longevity.

Purpose: To determine if alternate patient visit schedules could be safely used during the intensified followup phase of the 7217B PCD.

Methods: BV and CT were measured in 11 patients with 7217B PCD's during intensified followup. The ERI parameter was noted.

Results: The mean duration of the intensified follow-up phase was 18.0 months (range 15–22). Device use was moderate as four patients had a total of 8 shock therapies during this phase. In 9/11 patients BV was used as the ERI. Significant prolongation of CT was not seen until BV's of 5.04V were reached. Evaluation of various BV cutoff points (see graph) revealed that the mean time from a BV of 5.07V to ERI was 11.1 months (range 6–13). The mean time to ERI from a BV of 5.04V was 4.6 months (range 3–7).

Conclusions: In patients with 7217B PCD's, intensified followup schedules can be safely deferred until BV declines to 5.07V. A cutoff of 5.04V may also be acceptable in some patients. This should reduce the number of patient visits and the reduced need for CT measurement may prolong battery life.

1229-174 Performance of the Lead System for the Metrix Automatic Implantable Atrial Defibrillator

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Stability and chronic performance of the lead system is critical to ensure successful atrial defibrillation. In the Metrix clinical trial, atrial defibrillation thresholds (ADFTs) were measured at implant and at the 3-month follow-up using a up-down protocol to obtain two consecutive successes and failures. The average of these two values was defined as the ADFT. In 51 patients (pts), a three lead system was implanted and connected to the Metrix device (model 3000 or 3020): an active fixation lead with a 6 cm defibrillation coil in the right atrium (RA), a passive 6 cm defibrillation coil in the distal coronary sinus (CS) and a tined bipolar lead in the right ventricular (RV) apex. The model 3000 (N = 17 pts) used a 3/3 ms and the model 3020 (N = 34 pts) a 6/6 ms biphasic waveform. For this reason, the model 3020 was capable of delivering twice the amount of energy although the maximum deliverable voltage was the same for both devices.

Results:

	ADFT at implant	ADFT at 3-month
Model 3000	206 ± 51V (1.53 ± 0.74J)	220 ± 47V (1.76 ± 0.63J)
Model 3020	193 ± 39V (2.66 ± 1.08J)	190 ± 51V (2.72 ± 1.46J)

Analysis using only the paired ADFT voltage data showed no significant difference in ADFT between implant and 3-month [p = 0.85 for both models combined (N = 24), p = 0.21 for model 3000 (N = 10) and p = 0.26 for model 3020 (N = 14)]. Power analysis determined that there was 99% power in the data to detect a 50 V difference in ADFT voltage should one have existed. During follow-up of 259 ± 138 days, 6 pts required lead repositioning: RA lead in 3 pts due to an acute increase in defibrillation requirements, RA and RV lead dislodgment in 1 patient each, CS lead in 1 patient in a small cardiac vein.

Conclusions: Initial clinical experience showed that the lead system for the Metrix atrial defibrillator has been stable with no significant acute to chronic changes in ADFT. Complications seen with this lead system are similar to those observed with other implantable devices.

1229-175 Biphasic Endocardial Defibrillation Raises the Pacing Threshold in a Steroid-eluting ICD Lead

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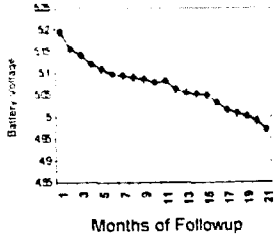
Background: There is debate as to whether the pacing threshold increases following implantable cardioverter-defibrillator (ICD) shocks. We sought to investigate whether the post-shock pacing (PS) threshold increased significantly in an endocardial, steroid-eluting lead with dedicated bipolar pacing electrodes.

Methods: Twenty patients (16 men, 4 women, median age 73, EF 0.17 to 0.58) were studied during pectoral ICD implantation (Medtronic model 7221 cx or 7223 cx [active can] with model 6932 lead). The diastolic pulse width pacing threshold at 1 or 2 volts was determined. Pacing rate was set 100/minute at twice diastolic threshold output to assess pacing immediately following the first DFT test shock. For subsequent shocks, the output was adjusted to establish PS thresholds as 1, 2, 3, or 4 times the diastolic threshold. The PS threshold was defined as the output yielding 100% capture 2.5 seconds following a shock.

Results: In 8 of 20 patients (ratio 0.40 ± 0.11), a rise in the PS threshold was shown by failure of consistent capture when pacing at 2X diastolic threshold 2.5 seconds after a DFT test shock. Two of these patients failed at 3X threshold, but none failed at 4X. Five of 12 patients with successful capture at 2X failed to capture at threshold. The PS threshold increased by a mean factor of 2.83 ± 0.83 in the group of patients with a threshold rise.



Mean BV vs. Time